



State of New Jersey

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Department of Environmental Protection

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Division of Science and Research

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July 29, 1998

Mr. Larry Pollex
Perth Amboy Dept. of Municipal Utility
260 High Street
Perth Amboy, NJ 08861

Dear Mr. Pollex:

This is to notify you of results from the water samples that were collected from your facility in early December by the N.J. Department of Environmental Protection (NJDEP) and the U.S. Environmental Protection Agency (EPA). We have included our previous letter to you that described this study (see attachment).

The samples were taken as part of two similar but separate studies being conducted respectively by our two agencies. This first round of preliminary analyses was performed by the labs at the NJ Department of Health and Senior Services (DHSS) and at the EPA, Region 2 facility in Edison using standard regulatory compliance methods. As we informed you earlier, results from the advanced analytical research methods being conducted at Rutgers will be made available in about a year.

In general, our conventional analyses confirmed what your system has reported historically; that raw water from Perth Amboy Water Department contains trace levels of contamination but the water leaving the water treatment device meets or exceeds all state and federal regulatory requirements. A more detailed description of your results is attached.

The EPA pursued the identification of some of the tentatively identified compounds (or TICs). (A TIC is a chemical that has been detected and identified by molecular fragments using a gas chromatography/ mass spectrometric (GC/MS) or liquid chromatography/ mass spectrometric (LC/MS) analysis. Due to the tentative nature of the identification, true presence in an environmental matrix must be substantiated by confirmatory analysis and structural elucidation



by a mass spectroscopist.) The results show naturally-occurring organic acids may be present in your water, but the occurrence of the acids was sporadic and not consistently reproducible in the duplicate sample. The available health information which was collected and analyzed by the Agency for Toxic Substances and Disease Registry (ATSDR) indicates that the presence of these TICs in the water samples likely poses negligible or no public health threat. Although very little toxicological information is available for the TICs with confirmed identities, the reported levels are low, and the available toxicological information for the classes of compounds in which these TICs are grouped indicates that the toxicities are likely to be low. Additionally, our review of the data indicates that some detected contaminants may be introduced into the samples during sample collection or preparation.

All treated water we tested meets current standards for the regulated parameters (chemicals) tested. The water is safe to drink. In addition, the Department does not recommend any changes in how the water is used.

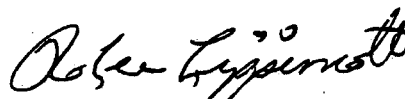
The goal of the research that is being conducted at Rutgers University during Phase II of this study is to examine the water for trace levels of natural compounds as well as classes of synthetic organic compounds that may not be detected by routine regulatory methods. We have forwarded the results from the EPA and DHSS to Rutgers. As we get additional information on the analyses being conducted at Rutgers, we will forward them to you.

If you would like any additional information about the NJDEP study, please contact Dr. Lee Lippincott at (609) 984-4699. Additional information about the EPA study can be obtained from Mr. Dan Forger at (212) 637-4402.

Sincerely,



Barker Hamill, Chief
Bureau of Safe Drinking Water



R. Lee Lippincott Ph.D., Project Manager
Division of Science and Research

ATTACHMENTS

cc: Luis Perez, Perth Amboy Dept. of Municipal Utility
Leslie McGeorge, Director, Division of Science and Research, NJDEP
Dan Forger, EPA, Region 2

N. J. DEPARTMENT OF ENVIRONMENTAL
PROTECTION, DIVISION OF SCIENCE AND
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P.O. BOX 409
TRENTON, NJ 08625

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 2, EMERGENCY & REMEDIAL
RESPONSE DIVISION
290 BROADWAY
NEW YORK, NY 10007 1866

November 7, 1997

Mr. Larry Pollex
Perth Amboy Dept. of Municipal Utility
260 High Street
Perth Amboy, NJ 08861

Dear Mr. Pollex:

This is to notify you that the N.J. Department of Environmental Protection (NJDEP) and the U.S. Environmental Protection Agency (EPA) intend to collect water samples from your drinking water supply sometime during the last two weeks of November. Mr. Joseph Hudek from the EPA Division of Environmental Science & Assessment or Dr. Eileen Murphy from the NJDEP Division of Science & Research will contact your water department staff to arrange the specific date and time. Your cooperation in this effort is greatly appreciated.

These samples are being taken as part of two similar but separate studies being conducted respectively by our two agencies. We have decided to synchronize the collection of samples and hope that this will minimize any inconvenience to you or your staff.

NJDEP Study

The NJDEP, Division of Science and Research, is undertaking a study in cooperation with the Bureau of Safe Drinking Water. The study was developed as a research project with scientists at Rutgers University to analyze water samples for synthetic organic chemicals using novel analytical methods. The principal investigators from Rutgers on this project are Dr. Brian Buckley from the Environmental and Occupational Health Sciences Institute and Dr. Robert Rosen of the Center for Advanced Food Technology. The purpose of this study is to determine 1) if non-volatile and semi-volatile compounds are present in the raw water for which water companies are currently using treatment to remove volatile organic chemicals, and 2) if these compounds are present, to investigate whether the treatment is removing them. Sampling for the project involves the collection of raw and treated water from the well and well field. Approximately 2-14 samples total will be collected and analyzed by advanced, nonconventional analytical methods at Rutgers University. In addition, all water samples will be analyzed by conventional EPA Methods 524.2 and 525.2 at the Department of Health and Senior Services Laboratories.

EPA Study

The EPA Superfund Program requires that certain Superfund remedies be reviewed on a periodic

basis (every five years) to ensure that they remain protective of human health. It is our understanding that your groundwater supply includes a treatment process that may be considered a remedy of groundwater contamination associated with a nearby Superfund site. EPA intends to take one sample before treatment and one sample after treatment and analyze those samples by EPA Methods 524.2 and 625. While it is our understanding that your supply currently meets the Maximum Contaminant Levels (MCLs) required by the Safe Drinking Water Act, the focus of this study is on the presence and concentrations of non-MCL volatile or semi-volatile contaminants. The purpose of looking for these non-MCL contaminants is to confirm that there is not an unusual Superfund contaminant source that may have been overlooked. After the results are found to be scientifically valid, we will share those results with you. EPA will conduct remedy reviews at many Superfund sites in New Jersey during the next year; however, the testing of drinking water supplies for non-MCL contaminants is currently planned for only four sites in New Jersey.

Water samples will be analyzed by conventional and nonconventional methods at three different laboratories (EPA-Edison, NJDHSS, and Rutgers). Results from the conventional analyses being performed at EPA and NJDHSS are expected to be completed in about a month. Results from the nonconventional analyses, being performed at Rutgers, are expected to take about a year to be completed.

If you would like any additional information about the NJDEP study, please contact Dr. Eileen Murphy at (609) 633-2342. Additional information about the EPA study can be obtained from Mr. Dan Forger at (212) 637-4402. Sampling event arrangements can be made with either Mr. Joseph Hudek of EPA at (732) 321-6713 or with Dr. Eileen Murphy of NJDEP at (609) 633-2342.

Sincerely,

Barker Hamill, Chief
NJDEP, Bureau of Safe Drinking Water

Eileen A. Murphy, Research Scientist
NJDEP, Div. Of Science and Research

Dan Forger, Cost & Constructability Expert
EPA, Emergency & Remedial Response Division

RESULTS OF WATER ANALYSIS

Table 1: NJDEP Sampling Results

Water Sample	VOC Contaminant	Concentration Found (ppb)	MCL (ppb)	
			NJ	US
Perth Amboy-Old Bridge Water Dept.: Fac. 01, Raw well 6A	chlorobenzene: 0.3	0.3	50	100
Perth Amboy-Old Bridge Water Dept.: Fac. 01, Raw well 6A, duplicate	none	-	-	-
Perth Amboy-Old Bridge Water Dept: Trip blank	none	-	-	-
Perth Amboy-Old Bridge Water Dept: Trip blank	chloromethane chlorobenzene	2 0.3	- 50	- 100

Table 2: NJDEP Sampling Results

Water Sample	SOC Contaminant Identified but not quantified	Estimated Concentration (ppb)
Perth Amboy; Raw well 6A	Oleic acid* (duplicate samples collected)	9 and 49
	N-nonanoic acid (found in one of two samples)	10
	Octanoic acid (found in one of two samples)	3.7

* Also found in trip blank at 3.5 ppb.

**Treated Drinking Water used for SDWA Compliance

Table 3: USEPA Sampling Results

Sample Location	Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (Semi-VOCs), and Tentatively Identified Compounds (TICs) Detected by EPA: Concentration (ug/L or ppb) Sample Duplicate # 1	Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (Semi-VOCs), and Tentatively Identified Compounds (TICs) Detected by EPA: Concentration (ug/L or ppb) Sample Duplicate # 2
Perth Amboy Old Bridge Water Department: Fac. 01, Raw well 6A	<u>VOCs:</u> cis 1,2-dichloroethylene: 0.3 J chlorobenzene: 0.3 J <u>Semi-VOCs:</u> oleic acid: 49 J <u>TICs:</u> none found	<u>VOCs:</u> cis 1,2-dichloroethylene: 0.3 J chlorobenzene: 0.3 J <u>Semi-VOCs:</u> oleic acid: 49 J n-nonanoic acid: 10 J octanoic acid: 3.7 J <u>TICs:</u> 1,13 tetradecadiene: 10 T 1,2-benzenedicarboxylic acid, diisononyl ester: 9.7 T

NOTES:

- 1) The USEPA Region 2 Laboratory used USEPA 524.2 for the VOC analysis and USEPA Method 625 for the Semi-VOC analysis
- 2) The VOCs acetone, methylene chloride, 2-butanone, chloroform and carbon disulfide were present in several well samples; however, these compounds were also present in one or more of the quality control blank samples that were analyzed as part of this study. This indicates that their presence is likely due to field and/or laboratory contamination. As such, these compounds were not included in the report table.
- 3) Various phthalate and adipate compounds were present in each well sample (at least one of the duplicate samples where duplicate samples were collected). The concentrations were in poor agreement among the duplicate samples (where duplicate samples were collected) and these compounds are common field and/or laboratory contaminants. This indicates that their presence is likely due to field and/or laboratory contamination. As such, these compounds were not included in the report table.
- 4) Several contaminants were reported and qualified with a "J". The "J" qualifier indicates that the compound was detected near the detection limit of the method and, as a result, is subject to an increased degree of measurement error. The laboratory is confident that the compound is present but the concentration should be regarded as an estimate.
- 5) Several contaminants were reported as "Tentatively Identified Compounds" or TICs and were qualified with a "T" to indicate such. They are qualified with a "T" because their identification and estimated concentration are tentative or uncertain because the compound was not part of the calibration curve used to identify and quantitate for the "regular" VOC and Semi-VOC contaminants found in the sample.